

CLAIMS

What we claim is:

1. A ceramic packing element comprising:
5 a monolith structure having a generally block shape and having plurality of equally spaced parallel openings therein extending the length of the block where the openings have generally straight sides and have significantly rounded corners having a radius of between about 0.3 mm and 1.8 mm.
- 10 2. The ceramic packing element of claim 1 wherein the openings are between about 1.8 and ~~6.5 mm.~~
3. The ceramic packing element of claim 1 wherein the structure has between 20 to 60 cells by 20 to 60 cells totaling between 400 to 3600 cell elements..
- 15 4. The ceramic packing element of claim 1 wherein the geometric surface area is between about $300 \text{ m}^2/\text{m}^3$ and $1310 \text{ m}^2/\text{m}^3$.
5. The ceramic packing element of claim 1 wherein the geometric surface area is about 400
20 m^2/m^3 .
6. The ceramic packing element of claim 1 wherein the openings have a radius ratio of greater than 0.15.
- 25 7. The ceramic packing element of claim 1 wherein the openings have a radius rotation of 015 to 0.30.
8. A regenerative thermal oxidizer comprising:
A. a combustion chamber including a burner;

- 5 B. at least two heat exchangers, each having a heat exchanger passage leading into said combustion chamber and having a heat transfer column located therein; an inlet line connected to a source of gas to be cleaned having entrained pollutants and communicating with an inlet branch leading to each of said heat exchangers with an inlet valve located in each inlet branch;
- 10 C. an outlet line leading from each heat exchanger, each outlet line including an outlet valve, and an outlet branch communicating with each said outlet line; gas to be cleaned being delivered through said inlet line into one of said heat exchangers by opening of said inlet valves and closing said outlet valve on said one heat exchanger, gas moving through said heat exchanger and into said ~~combustion chamber where said gas is combusted, the combusted clean gas then~~ being led into a second heat exchanger having a closed inlet valve and an open outlet valve, the gas then being delivered to said outlet line; and
- 15 D. said heat transfer column including a solid body formed of heat resistant, heat retaining material having a plurality of spaced axial gas flow passages, said passages having a substantially constant cross-sectional area with generally straight sides and significantly rounded corners having a radius of about 0.3 to 1.8 mm, the pressure drop across the heat transfer column being less than 5 inches of water when the superficial flow rate is greater than 100 feet per minute.
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